Fourteenth Year of Publication

Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

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Eastern Office: C. A. Larson, Mgr., 254 West 31st Street, New York City; Phone, Penna. 6-9049

"Gentlemen: Here's our problem" . . .

That's the way the letters begin—dozens of them—received every week—by DeVilbiss—letters asking for help in solving some difficult or different product finishing problem. And seldom do DeVilbiss Spray Experts fail to find the answer—even though that answer may require the designing of new spray equipment.

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Letters from Readers

OF INDUSTRIAL FINISHING

Editor's Note—These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters sent to them in care of this office will be forwarded at once.

Dielectric Enamel

I would like to have more information about the Dielectric Enamel No. 119 described in the January 1938 issue, page 39.—H. G. T., Chief Inspector, General Electric X-Ray Corp.

Floating Lacquer Article Promised

Some time in the near future, when I have time, I have in mind preparing some material on the process of producing marble finishes —of course, that is if you think it would be interesting enough for an article. It consists of floating lacquer and oil colors on water. The materials and colors introduced into the water, and the manner in which they form themselves into marble effects, is a very fascinating procedure. These designs are picked up by the objects that are immersed through the surface of the water.—Meyer Roter.

Yes indeed, Mr. Roter, we'll be glad to get the article about floating lacquers.—Ed.

Finisher's Hand Cream

In the April issue we notice an article on "Causes of Poor Finishing," page 28, wherein the author, Mr. H. H. Glinke, mentions the condition of the sore hands of people working with thinners and gasoline, and recommends any cream that has a healing quality but one that has no caustic effect on the hands.

Do you know of any cream that Mr. Glinke has in mind that he or you could recommend to us, inasmuch as we have this condition in our plant.—A. R. Mfg. Co. (Mfrs. of Fishing Rods).

Crystal Lacquers

Will you kindly furnish us with the names of manufacturers of synthetic-gum varnishes to be used as a top coat for crystal lacquer? We would also like the names of manufacturers of crystal lacquers. — E. Mfg. Co. (Venetian Blind Division).

Graining Metal Desks; Color Charts

Could you give me any information as to how to get the best results in graining metal desks and letter files? Or could we get something in the way of transfers that would do the work? Where can I get a color chart that will show the results of mixing two or more colors together?

P. S. I would be glad to hear from some good experienced man—one that neither drinks or smokes if possible—in regard to coming over here for a year or so, and who could

INVESTIGATE

the latest **— most attractive line of new and different finishes, such as SWEDISH MODERN, DISTRESS, Nu-DARK, MELO-TONE, GEORGIAN, PATINA, etc.**

Modern methods **employing DuBar Bleach, Wateroil Stains, Rub-Less Lacquers.**

Complete information and samples without charge, to responsible manufacturers.

V. J. DOLAN & COMPANY, Inc.

1830-32 LARAMIE AVE. CHICAGO, ILLINOIS

Manufacturers of

"Unquestionable Quality" Wood Finishing Supplies

ECLIPSE presents "THE GAT"

GET Perfect results with synthetics at greater speeds.

GET Less off-spray through lower spraying pressure.

GET A saving in power plus dependable performance.

GET Results that others are getting.

"GET A GAT"

ECLIPSE AIR BRUSH CO., INC. 392 PARK AVE. NEWARK, N. J.

buy an interest in my business if a satisfactory arrangement could be made.—H. I. H. (Refinishing, etc.). Honolulu, T. H.

Graining Brushes

Can you supply me with the name of some firm from whom I can get graining brushes, such as are described and illustrated in the article, "Reproducing Wood Grain on Metal Surfaces," published in March and April issues? I am interested in applying hand-grained finishes on metal burial caskets and would appreciate getting in touch with someone who does this work.—L. K. A. (Finishing Room Foreman).

Charter Oak Finish

On page 20 of your April issue, H. H. Glinke describes what he chooses to call a "Charter Oak" finish. We would like very much to get in touch with Mr. Glinke and would appreciate your furnishing his address.—H. R. Co. (Factory Finished Flooring).

Mar-Proof Finishes; Luminous Paints

We would appreciate knowing the best way to refinish bath tubs on which the enamel has been damaged or worn off. Also, advise if there is any material on the market that can be sprayed and air dried, that we can use on our office furniture line—something that is scratch-proof, alcohol-proof and burn-proof to the extent of resisting burns by a lit cigarette. Also, please send us the names of some manufacturers of luminous paints.—V. Furn. Co. (Office Furniture; Colonial Reproductions).

Flocking Machine

Where can we buy a machine or an appliance that will blow flock over an irregular surface that has previously been sized with the flocking glue?

We are acquainted with the fact that various concerns sell flocking guns, but for our particular purpose we need something in the form of an airtight box, where the article to be flocked can be inserted and the flock applied by air blowing into

STILLE-YOUNG
Lacquers
Stains
Sealers
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Greater Practical Value... Competitive Prices

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Send for interesting facts on MOST COMPLETE AIRFINISHING LINE and definite suggestions to benefit you — no obligation.

Profit with Paasche

Paasche Airbrush Co.
1917 Diversey Parkway
Chicago, Illinois

the box and in that manner agitating the flock so that it will be properly applied on the surfaces that are sized.—E. D. Mfg. Co. (Lamp Shades and Novelties).

Lacquered Paper Caps

The article, "Lacquered Paper Caps to Stick Together," on page 46 of the April issue, is of interest to us. Our laboratories have been working on similar problems for some time and we would be interested in knowing the concern referred to in this article.—du Pont Co. (Finishes Division).

Paint Can Adapter

In your February issue there was announced a can converter to fit any standard tin. Will you please give me the name of the manufacturer of this item?—H. W. Co. (Paints).

Spray Booth Coating

Could you give me the name and address of the concern that sells a cleaning compound to be used as a temporary coating for a spray booth interior?—M. M. Co. (Paints).

Graining on Metal

In the March issue of your magazine, I see that you have an article on: "Reproducing Wood Grain on Metal Surfaces," by Meyer Roter.

The author mentions various processes by which wood graining may be reproduced on metal articles, and names lithographing, specially made rollers, decalcomanias, stencils, etc.

As I seem to recall that you have previously published advertisements from firms dealing with these processes, I should greatly appreciate your sending me the names and addresses of a few of these firms.—C. F. D., Oslo, NORWAY.

Finishing Methods

We have just received a letter from a Sales Corp. in Rawalpindi, India, stating that they are anxious to know all about the various ways of using different types and makes of American paints for industries

(Continued on page 64)

SPECIFIED INDUSTRIAL FINISHES *for*

METALS
Red Oxide Primer
Clear Metal Lacquer
Lacquer Enamels

PAPER COATING
Clear
Bronzing
Opalescent

WIRE AND CABLE COATINGS
Clear Flameproof
Black Safecoat

RUBBER
Clear Flexible—Quarterlining
Before or After Cure Bases

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Tough, practically mar-proof, heat resistant, long life.

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Competitive Lacquer having good build, good resistance to checking, rubs well.

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50 CYCLES COLD CHECK TEST

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Noroy Lacquers — 24% Total Solids

(NON-ROYALTY)

W-1025—A clear gloss wood lacquer. Showed no failure after this severe cold check test of extreme temperatures. Reduces 3 parts thinner to 2 parts lacquer bringing actual cost below royalty lacquers.

F-1625—Flat wood lacquer also withstands 50 cycles cold check test. Reduces 3 to 2 . . . Both flat and gloss lacquers can be sanded and rubbed within fifteen minutes.

S-1225 — Sanding Sealer. Dries to sand in fifteen minutes.

PINT SAMPLES FREE — LARGER SAMPLES AT DRUM PRICES.

RUDD LACQUER & SEALER CORP.

80 Cliff Street, New York, N. Y. Factory—Rahway, N. J.

Repainting Street Cars

PAINT JOBS do not last forever—not on the street cars, trackless trolleys and buses used for public transportation in a city. Paint coats wear out before the cars do, therefore progressive transportation companies arrange for repainting their equipment at certain intervals. Naturally the locality in which the cars are operated has much to do with how long a good paint job will last. In industrial centers all outside exposed surfaces become soiled quickly and require frequent washing—which in turn, helps wear away the painted surfaces more rapidly.

In Indianapolis, Ind., the present schedule of the Indianapolis Railways, Inc., calls for repainting the outsides of its cars, trackless trolleys and buses—about 400 of them—once every three years. In other words each outside paint job on a car must last and be presentable for 36 months. This is now accomplished with a one-coat system, using an air-drying synthetic enamel of nationally known make. The work of repainting cars goes on continuously and it includes operations similar to those involved in

BY W. H. ROHR

Fig. 1—Men are dry sanding the car at left, preparatory to starting a repaint job. Spray painting is performed while car stands under the 60-ft. canopy shown at right.

in Modern Car Shops

One-coat synthetic enamel
Ford-cup viscosity readings
Hydrometer readings . . . Baume
Power and hand sanding
Spot priming by spray
Cleaning with lacquer thinner
Masking windows from spray
Spray finishing in one day
Striping and color separation
Decalcomania lettering
Final touch-up work on cars

the cleaning, painting and decorating of new products.

In the company's new $1,000,000 car shops, which are probably the finest in the country, the paint department has the latest and most modern equipment for its car-painting operatings. The main room is 120-ft. long, 54½-ft. wide, and has a balcony 20-ft. wide extending clear across one end. It has a very high skylighted ceiling which affords excellent shadowless lighting, even on cloudy days. Artificial lighting of the latest approved type is provided so the shop can be perfectly lighted on dark days or at night time. All electric lights are either of the vapor-proof or explosion-proof type, that is the bulbs are protected either with an additional globe or by a glass plate covering the front of the reflector. A system of overhead unit heaters serves to keep the room at a comfortable temperature during cold weather.

Fig. 2—Working at the line where colors join, the spray man carefully holds his mask in correct position and sprays up to it. Later he divides the yellow and blue color areas sharply with a striping brush.

Three parallel tracks extend into the room. Cars are easily moved to and from these tracks by a traveling transfer which serves other parallel tracks extending into the several depart-

ments of the shops. Over the middle tracks there is a 60-ft. canopy or "suction hood" of the regulation type for use over spray painting operations on large cars and buses. The hood has four large exhaust pipes extending up through the roof and in each pipe there is a powerful suction fan, independently controlled. To supplement this strong suction from above, there is blower that blows a thin curtain of air upward through narrow grooves in the floor at each side of a car standing under the hood. The blower that provides these two side curtains of upward moving air is mounted at the top of a perpendicular pipe located at one side of and about the mid-length of the hood, see Fig. 3.

Let us observe what goes on in this repainting department. See that car at the left of Fig. 1. It came in the day before, so the men could get to work on it the first thing this morning. They are sanding it clean and smooth preparatory to repainting. Two men work on a car at a time, working from the top down. They begin by sanding the roof and everything on the roof except the trolley mechanism. For this roof sanding one man uses a portable electric-driven disc sander (using about six discs of No. 80 sandpaper per car) while the other workman sands and scrapes the ventilators and other places where the disc sander does not work satisfactorily.

The men stand on portable scaffolds while hand-sanding the sides and ends of the car, as you see one man at work in Fig. 1. The disc is not used here because there are so many rivet heads. The men use two grades of sandpaper as

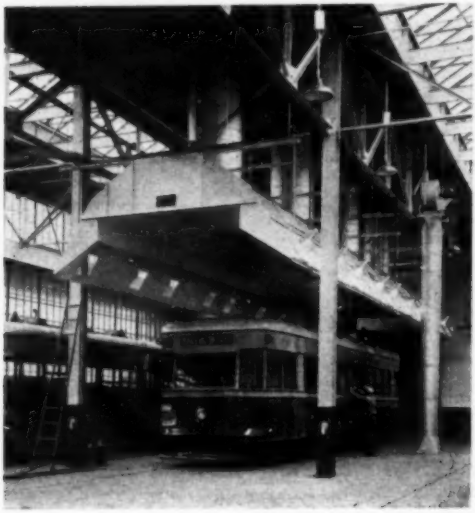


Fig. 3—Replacing painted window guards on outside of a finished car which is still standing under the 60-ft. canopy. Drop cords alongside the canopy are for the regulation of control dampers in the canopy. Starting switches are located in switch boxes which are mounted conveniently adjacent to the canopy.

An installation of The DeVilbiss Co., Toledo, Ohio

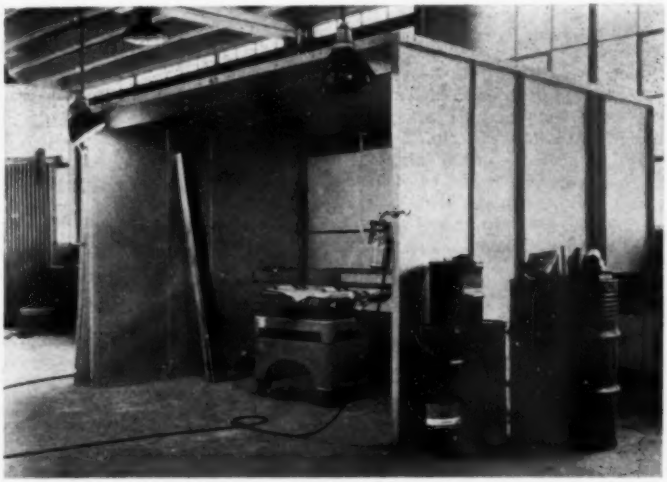


Fig. 4—A 10-ft. spray booth under the 20-ft. balcony, for spray painting window guard rails, replacement door sections and other removable parts of cars and buses.

they go along—No. 1/0 for heavy cutting and No. 150C for fine smoothing.

Two men, starting this sanding in the morning, will complete it by mid-afternoon. Then they dust off the car thoroughly with an air duster, examine the surfaces carefully for any sanded-through places and, wherever spots are found that need it, they do the necessary spot-priming with gray primer, spraying it on. This completes an 8-hour day's work.

Next morning the car is washed down with lacquer thinner and wiped clean with wiping rags. This takes two workmen about one hour. Then the adjustable windows are raised about 3½-in. to permit the insertion of close fitting wood blocks which have an outward projecting shoulder that supports the lower edges of sheet metal masks set in place to cover the windows (both the glass and the brass frame around it). Each mask for an adjustable window is carefully taped along the sides but not at the top or bottom. However, on stationary windows and on the glass in doors, name panels, markers and headlight, the masks are taped all around. The masking is completed within one hour's time.

The color scheme used on these cars is gray for the roof, canary yellow from roof to below the window line, and dark blue the remainder of the way down. This means that there are two contrasting colors extending around the sides and ends of each car.

With the masking completed, two men are ready to begin spraying. One man begins at the front of the car while the other starts

at the rear, and they progress around on opposite sides. Naturally, the yellow, being for the upper half of the car, is sprayed first. It is prevented from spreading over the old blue areas too much by the skillful use of sheet metal shields, one of which is held by each man as he sprays near the border. Each shield measures 6-in. wide by 30-in. long and is held in the workman's left hand, see Fig. 2.

Connections for air hose are located at each of the steel posts shown in Fig. 3, and on the walls on both sides and at the front and back of the cars. The men spray synthetic enamel from pressure cups attached to their spray guns, spraying at a pressure of 65 to 70-lbs. at the nozzle of the gun, with 10-lbs. pressure at the cup.

Each batch of material is thinned slightly and thoroughly mixed to get a definitely tested, predetermined viscosity and specific gravity. The viscosity is carefully measured with a Ford viscosity cup; specific gravity is measured with a Baume hydrometer. In fact, conditions of temperature, viscosity and specific gravity of material, and spray pressures are closely controlled so that all car-painting jobs will be as nearly identical as possible.

After the yellow has been applied the blue is sprayed on, the workmen carefully shielding the spray where it comes close to the line of yellow. This leaves an irregular line separating the yellow and blue, but this will be finished up clean and sharp when the blue bands are laid on over the yellow, above and below the windows and below the roof. In order to give the yellow time to dry sufficiently before the blue bands are brushed on, the workmen begin painting the roof after they finish spraying the blue.

The fabric-covered roof is finished in a light gray roof paint, which is brushed on in order to work the paint more thoroughly into cracks, checked places or pinholes.

The blue bands just mentioned are put on with a brush, the operator using a striping brush at the edges and filling in between stripes with a wider brush. Following the painting of the bands and the color separation, the masking is removed and the final touch-up work is performed. In the meantime the window guards and perhaps some other parts (for instance, replaced hardware, doors, etc.) have been cleaned and sprayed at a regulation 10-ft. spray booth, which is illustrated in Fig. 4. Replacement door sections, trackless trolley wheels and various other parts are sprayed in this booth.

A small electric oven is also available for quickly drying refinished hardware or metal parts which may be needed in a hurry for the outside of some car.

On the morning of the third day, the lettering and numbers are carefully located and the decalcomania transfers are put in place and pressed tightly to the surface. After the decals are stripped off and any necessary touch-up work is completed, these lettered and numbered surfaces are given a light coat of clear varnish to help seal them and protect them from the weather and the wear and tear of service. This completes the outside repaint job on a typical street car, trackless

trolley or bus. The principal material consumption, including thinner is:

Yellow Synthetic Enamel .....¾-gal.
Dark Blue Synthetic Enamel ¾-gal.
Gray Roof Enamel .....¾-gal.

A planned improvement on the present procedure (to be placed in operation as soon as an adjoining room is properly equipped) will be for the car to be thoroughly washed and dried first. It will be washed with a chemical cleaner solution and dried by blowing it with compressed air or wiping the wet surface with rags—or perhaps both. Then the under structure will be sprayed with black chassis enamel from a 5-gallon pressure container, the operator using an extension spray gun to reach all parts under the car. This preliminary cleaning will result in a considerable saving on the time now required to sand the car clean and to later wash it down with lacquer thinner—and the black chassis paint will help to make the under structure more presentable in appearance.

Philippine Mahogany Finishing

IN THIS ARTICLE I am submitting something which I trust may be of interest and help to some of your finishers who work on Philippine mahogany. I devote much of my time to finishing Philippine mahogany which as you probably know, is not related to the genuine mahogany. Genuine mahogany is imported

Exhibit of Advance Paint Co., Indianapolis, Ind., at the industrial Inform-A-Show held in Murat Temple in Indianapolis, Ind., March 2, 3 and 4. This show, the first of its kind in Indianapolis, was arranged and presented by the Purchasing Agents' Association of Indianapolis, Inc. Products of more than 100 firms were exhibited.

from Honduras, Guatemala, Nicaragua and from the Gold and Ivory coasts of West Africa; also the West Indies.

We get some very good Philippine mahogany which works up beautifully. Then, at times, we have to take an inferior grade—an off-color or fuzzy mahogany which some finishers call bastard mahogany, lauaan, etc. Then is when a finisher has to be on his toes to get the finish matched with some of the better mahogany, as it is sometimes quite difficult to obtain the better grades, especially when a firm is on a large productive basis.

I have worked with numerous painters and finishers, and they all seem to have a different idea about how to finish Philippine mahogany, but the majority of them try to get away from this particular type of wood—whether they do not want to put in the increased effort in order to get a good finish, or whether they do not know the method of producing a good commercial finish, I could never find out.

One particular finisher that I worked with would stain his filler and then apply it. After it had dried for 12 hours he would apply spirit stain with a rag, wiping it even; then he would follow up with a coat of shellac, giving this ample time to dry; then came the sanding to a smooth surface and one coat of fast-drying flat varnish. The work would have mottley or blotched areas. To me this always seemed to be a hard and costly way to finish Philippine mahogany. One does not get the real natural finish that otherwise should be obtained.

After several years of painting and finishing, the best method I have found for finishing Philippine mahogany is to use the right kind of filler mixed to a certain consistency; then apply properly. Let it dry for at least 12 hours; then use a good sealer which will dry in an hour or so; sand to a smooth surface; and follow with two coats of lacquer, allowing each one adequate time to dry properly.

I find this gives a first class commercial job. I recommend spraying instead of brushing, as you get a much smoother finish. I have used a wash coat of alcohol and shellac first, then sanded and followed the above mentioned schedule. *(Continued on page 21)*

Metal grillwork adds a new note to this breakfront cabinet—one of the many new models shown at the mid-season national home furnishings show at the American Furniture Mart. Made of ambered mahogany, the model shown is designed to blend with traditional or contemporary surroundings. The chair has a fruitwood frame and is upholstered in lemon yellow leather . . . secured with brass-head nails.

In a recent copy of INDUSTRIAL FINISHING, I noticed that a finisher was having trouble with pitting and pinholing on bar tops and top slabs. It seems to me that a flat top would be very easy to finish; I would suggest orange shellac as a filler—one or two coats rubbed close, resulting in the removal of all shellac except what lodges in the pores of the wood. For this method we know the wood has to be matched in order to get the same grain and color. Nature has not made two woods alike so we have to be governed accordingly.

Another way I have finished Philippine mahogany is to use boiled linseed oil; then let stand for 24 hours; wash coat with alcohol and shellac; when dry, sand to a smooth surface; then apply your sealer; sand again and go on with your lacquer or varnish.—A. DEAN LANG.

Porcelain Repair Finish

WHITE porcelain repair cement or "patch finish" is so much in demand for repairing damaged places in porcelain and vitreous enamel finishes (including marble and tile) that we are pleased to make known the fact that such a material is available.

Quoting from the manufacturer's information card, this material is "permanent in color, quick setting, easy to use, waterproof; will not crack under pressure; hardens completely in a few minutes; and requires no overcoating with lacquer or other finishing material."

Directions are as follows: Heat the damaged place in porcelain to remove chill. Heat a clean thin flexible knife in any blue flame that is free from smoke, or in an electric knife-heater. Then apply the hot knife to the stick of repair cement to soften it, just as you would heat a shellac stick. Work the softened warm cement into the damaged place with a hot knife, and build up to a smooth level surface. The surplus and excess material can be easily scraped off or sanded off. To produce a luster that will match that of the surrounding porcelain, touch the patched surface lightly with the heated knife. —EDITOR.

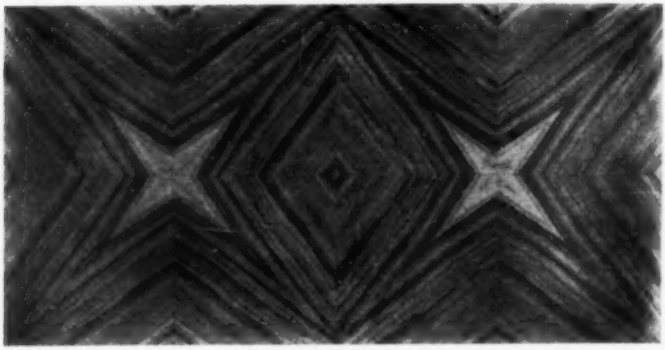
Du Pont Announces New Green-Blue Pigment Color

A new pigment color, "Monastral" Fast Blue GS, is announced by the Dyestuffs Division of the E. I. du Pont de Nemours & Co. It is designed for use in coloring paints, lacquers, wallpapers, soap wrappers, and similar materials. Very close in shade to Peacock Blue, it is greener than "Monastral" Fast Blue BSN. Like the BSN type, the new color has demonstrated fastness to light, acids, alkalies and lime, and does not bleed in oil, water, or alcohol. Because of the greenness of shade, it is expected to be useful for fast greenish blues and in combination for bright greens.

Pliolite Wall Finishes

Industrial wall paints that show remarkable resistance to humid conditions and to fumes, acids and alkalies—paints that will stand repeated washing and severe service—are given publicity in a 24-page book published by the Goodyear Tire & Rubber Co., Inc., Akron, Ohio.

According to the manufacturer, these paints may be easily brushed or sprayed; they level well and dry rapidly to a practically odorless condition within one hour. These coatings may be applied over new plaster or new concrete surfaces in minimum time without a primer. They will stand repeated washing and are free from any tendency to discolor.



Matched figures, overlays, border effects can be reproduced by modern graining.

ETCHED COPPER PLATE METHOD OF

Reproducing Wood Grain

FROM THE DAYS of the early Egyptians and the Roman Empire, down through the reigns of European kings, and right up to the present time, people of wealth and power have used nature's finest cabinet woods, such as walnuts and rich mahoganys for their beds, dressers, tables, cabinets and for the paneling in their homes and public buildings.

The strikingly attractive designs nature develops in the grain of these woods have never been replaced by anything created by man. For decorative purposes they are as good today as they were 1000 years ago.

The copper plate method of reproducing genuine wood graining is what is known in printing terms as a 150-line screen. In other words, 1-sq.in. of printing surface is broken into 22,500 dots so that every bit of detail is preserved and, when transferred to the ground-coated surface of plain wood, composition or metal, it gives a perfect reproduction of the beautiful wood grain being simulated.

The average person, looking at the splendid results of such a graining job and noticing that the surface can not be distinguished from the original wood, probably visualizes expensive machinery and a highly technical process—but just the reverse is true.

W. Nelson White
Graining Plate Division
American Electrotype Co.

The first step is to cover the surface (smooth plain wood

or metal) to be finished with a ground coat that matches, as closely as possible, the natural color of the wood. Graining ink is then spread over the face of the etched copper plate, which is laid out on a low work table in perfectly level position. The ink is spread on generously so it covers not only the etched areas but also the smooth high places on the plate. Then the workmen use a squeegee type of scraper that is long enough to extend clear across the width of the graining plate; one or two workmen carefully pass this squeegee scraper from one end of the plate to the other to scrape off the excess graining ink.

Ground Coating Followed by Graining

The next step is to take a composition covered roller and roll it over the surface of the inked plate. This composition roller picks up the ink remaining in the etched portions of the copper plate; in other words it picks up the exact inked pattern of the wood grain. The roller is large enough and is operated in such a way that to pick up the maximum length of pattern desired, it will make something less than one complete revolution—so that the starting point of imprinting on the circumference of the roller will not be reached by the maximum length of graining plate or maximum length of surface to be grained. There must be no overlapping.

As soon as the graining ink is picked up and imprinted on the circumference of the graining roller, it is ready to be transferred to the ground-coated surface to be grained. This transferring of the graining ink is accomplished by carefully rolling the inked roller over the ground-coated surface, which is also supported in level position. When this transferred graining ink is dry on the ground-coated surface, the grained surface is ready to be sprayed with one or two coats of clear lacquer or varnish to protect the imprinted grain and to emphasize its depth as well as to add a certain amount of luster or sheen to the final finish.

While, from a mechanical standpoint, there is nothing about this work that can not be taught to ordinary workmen in the plant, there are many opportunities to exercise considerable thought and skill in designing attractive and decorative effects. For example, plain wood or metal table tops, and panels, drawer fronts, the head and footboards of beds, etc., can be given the same rich attractive appearance that is secured in matching the finest veneers.

Artistic Possibilities; Matched Veneer Effects

In addition to transferring the entire graining pattern to an area of ground-coated surface, it is possible, with the skillful use of thin flat masks or shields, to grain part of the surface one way and another part another way, thereby producing V-matches, diamond matches, two and four-way matches, overlays, inlays, fancy borders, etc.

Suppose you want to reproduce, in the center of a table top, a decorative pattern of overlay or inlay of differently grained wood. Take a sheet of smooth heavy wrapping paper as large as a table top, fold it exactly

in the center to make two halves (or twice to make four quarters) and cut out a symetrical center piece the shape of the overlay you desire. With the folded paper you will find it easier to make this center piece exactly symetrical. Save this center piece you cut out, as it also must serve as a shield. Then unfold your large sheet of paper, spread it carefully over the table top and you shield out everything but the center opening. Here you can transfer the grain of Carpathian elm burl, birds-eye maple, or whatever you wish to use as an overlay.

After the graining ink on this center piece has become dry, cover it with the cut-out mask, which will exactly fit it. You can paste this down temporarily — just enough to prevent it from slipping. Then, with the large mask removed and with the properly inked roller, transfer your figured walnut or mahogany grain that is to cover all of the area around the overlay and clear out to the four edges of the table top. Or, if you want a margin of one or two inches around the edges to appear in a different grained wood, you mask this out also, and later mask out the large area of graining so you can print a different graining around the edges.

Metal and Plain Wood Products Beautifully Decorated

For several years manufacturers of metal beds have been doing this and have produced beds which excelled in appearance and out-sold beds made of wood that had little or no attractive figure. More recently, however, manufacturers of wood bedroom suites, using plain woods, have taken to wood graining to make their products more attractive and consequently more salable.

One of the great merits of grain reproduction by the use of etched copper plates and composition rollers is the extreme flexibility of the system. Practically everything that is done in the way of matching natural veneers can be accomplished by this method of graining.

One metal bed manufacturer has gone into the market every year with three or four new patterns all obtained by using the same three graining plates and transposing various parts of the patterns etched in each plate. This year his line follows the trend toward the lighter colors that have become so popular.

For a number of years one concern has manufactured small ovens—the plainest and homeliest utensil in the world. With one graining plate and no changes in other equipment, the company now turns that oven into an attractive walnut cabinet and as a result they are doing a wonderful business supplying each room in hospitals with a small walnut cabinet, whereas heretofore they had a market for only one or two ovens in each hospital.

A concern that started making radiator covers is now using the same graining plates they bought for radiator covers to grain air-conditioning equipment which they have added to their line. Another concern turns a metal casket into a rich piece of mahogany or a beautiful 4-way matched walnut. A novelty manufacturer, making poker chip holders, turns

homely gum wood into figured walnut, elm burl or mahogany. The possibilities for beautifying products made of plain wood, composition material or pressed metal are practically unlimited.

Restoring Finish of Antique Furniture

OVER A PERIOD of years of constant use antique furniture becomes dingy from dust and dirt becoming ground into the outer finish. Instead of stripping the finish down to the bare wood with varnish remover, I find that in most cases a better result can be obtained by merely removing the outer finish. This can be done by sponging the finish with straight alcohol. A small area should be well soaked with alcohol at a time; then, as soon as the finish is loosened up, the outer finish can be removed with the deft use of a damp cloth that has been dipped into alcohol and wrung out thoroughly. Care should be taken to avoid scrubbing too hard; also, make sure to get into all of the corners.

With the use of this method you will notice that the finish becomes considerably lighter in color and that the grain does not lift. It will also be noted that if one or two coats of rubbing varnish are applied, sanding between coats and giving the finish a final pumice rub, that the antique furniture will have been restored to its original finish. The final result will be a work of art.—H. H. GLINKE.

New Galvanized Metal That Takes and Holds Paint

A new kind of galvanized metal that prolongs the life of oils in paint is being used by the Tilt-A-Door Corp., Highland Park, Mich., in the manufacture of a revolutionary all-metal garage door that tilts upward and leaves no obstructing parts as a hazard to fenders.

Metal used for the doors is "Paint-grip," a product of The American Rolling Mill Co., Middletown, Ohio. Although it has a galvanized coating, the metal may be painted immediately without special treatment. A special mill-treatment of the galvanized surface preserves oils in the paint; prevents peeling and cracking.

Notice the decorative motif on the china of this well styled dinette grouping shown at the American Furniture Mart. Made of natural finished birch, this grouping is accented with turquoise blue hardware, chair seats and cabinet interiors.

Reclaim Used Solvents

FOR AS LITTLE AS A CENT A GALLON

BY A. WHITE
Vice President of Barnstead Still & Sterilizer Company

THE EDITOR of this magazine recently wrote me a letter in which he presented a "blind inquiry" from a manufacturer of steel products—a concern that was very much interested in cleaning and reclaiming used solvents. This manufacturer seemed to think that solvent recovery stills, such as have been illustrated and briefly described in this publication, would be too costly for him to consider. He was therefore wondering if it would not be possible to construct a "homemade" filtering outfit for the purpose, as this firm really wanted to clean and recover the dirty solvents that were being wasted in their metal cleaning and finishing department.

Ye Editor asked me to read the inquiry carefully and then submit my comments on it, possibly writing something that would be practical and informative but unbiased for the enlightenment of others, as it appears that many companies and individuals are interested in this subject.

First I will present the essential features of the steel product manufacturer's question. It is as follows:

We noticed in February, 1938, issue of INDUSTRIAL FINISHING that you gave the names of manufacturers who furnish equipment for solvent recovery. Is it not possible to make improvised equipment to reclaim solvents where small quantities are involved over a period of time?

We understand, from some of the literature we have at hand, that an ordinary paint drum equipped with some spickets (spigots) could handle the matter satisfactorily if the proper agents were put into the drum, namely, caustic soda and water. We have tried this plan in a small way but we did not seem to get all of the stickings out of the solvent which, no doubt, is the varnish. We are wondering what is the proper material to use to break down this varnish in our solvent and whether it would work better if this solution were brought up to a relatively warm temperature before putting in the solvent to be reclaimed, and whether mixing around with a paddle would do the necessary agitation, or if it is necessary to actually force the solvent under air pressure through the chemical cleaner?

A maximum of our cleaning solvent would be not more than 50 gallons a month, and perhaps that same amount of naphtha which we use for cleaning our pressure

tanks, hose and screens; so, we do not see that we would be justified in going into any expensive equipment. We are not so particular about the color of the reclaimed solvent as we are eager to take out the paint and sticky varnish that seems to be in the solution.

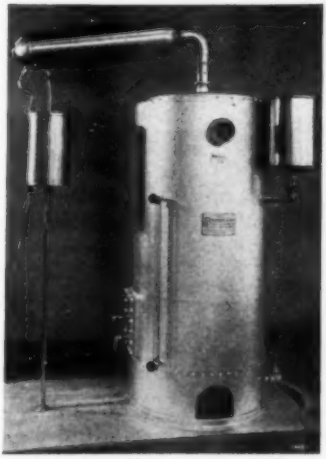
Any information that you care to give us regarding the proper chemical to use and the method of procedure will be greatly appreciated.—W. H. Mfg. Co.

In replying to this inquiry I will endeavor to explain a few facts about solvent recovery, which I think will interest all concerns that have dirty solvents to clean and reclaim.

From all of the information that we have available from our experience, we believe there is no suitable means of purifying dirty solvents by chemical means. The author of the inquiry indicates that he believes some suitable means of purifying the dirty solvent by the use of chemical agents such as caustic soda is practical. From a purely theoretical point of view, as far as we can determine, this procedure does not seem to be sound, and from our experience in this particular field, we would say that there is no method of using chemical treatment that will adequately purify the solvents, making them suitable for re-use.

There may be some special problems of solvent purification where certain particular impurities are present, wherein it might be possible to partially purify the solvent by chemical treatment. However, this would be a very specialized case and would not have any general application.

The only suitable means that we know of for general application of the purification of solvents is distillation. Distillation may be aided in some cases by filtration, gravity separation and chemical treatment, but in no case that we know of can any of these individual operations take the place of distillation.



A typical solvent recovery still.

Small Equipment Available

Solvent recovery stills are available from very small sized units, for handling just a few gallons of solvent at a time, to large units for handling any quantity of material for purification, and the operating cost is more or less proportional. In other words, it is economical in most cases to recover even small quantities, just as it is to recover large quantities. The big cost is the heating and handling of the solvent, and these costs are almost directly proportional to the quantity involved. Further, the first

cost of the equipment is more or less proportional to the quantity to be handled, and this, in most cases is negligible when the life of the equipment is taken into account and when the amount of materials to be processed is taken into account.

Typical Cost of Reclaiming Solvent

To give you a concrete example of the economics involved in recovering small quantities of solvent, let us take a solvent such as the usual type of lacquer thinner. These thinners range in price usually from 40c to 60c per gallon. Let us assume for the moment that there is only available about 10 gallons weekly of dirty lacquer thinner to handle in recovery equipment. The value of this would be approximately $5.00, and in an efficiently designed solvent recovery still this solvent can be reclaimed for about one cent per gallon, which means that there would be a saving of about $4.90 weekly. A small still of about 2-gallon batch capacity would be adequate in size to handle this amount of thinner weekly and the cost of such a still is about $80.

From the foregoing you can see that the first cost of the equipment would be made up in the savings of recovered solvent in about 17 weeks. Of course, if the quantity of material to be reclaimed is greater, the saving will be relatively greater, and in many installations, we have found that the equipment has paid for itself in less than a month after installation.

Industry as a whole has come to look upon the progressive spray finishing equipment company as an institution of service, ready to help them gain the objectives of increased production, reduced costs, and the perfection of smarter finishes.

Gas Heated Oven Catalog

Twelve pages of illustrations, descriptive data and specific information about gas-fired ovens and air heaters for industrial baking and drying are included in Bulletin No. 106, published and distributed by The Gehnrich Corp., Skillman Ave. and 35th St., Long Island City, N. Y. Copies are available on request.

H. V. Walker Co. Adds Walter S. Gross to Its Sales Staff

H. V. Walker Co., Elizabeth, N. J., announces that Mr. Walter S. Gross has joined their sales force, having formerly been connected with a lacquer manufacturing company in New York City for a number of years. He will make his headquarters in Philadelphia, covering Eastern Pennsylvania and Southern New Jersey territory.

Spray Painting Equipment Catalog by DeVilbiss

Twenty-eight pages (8½x11-in.) of illustrations, descriptions, engineering data and prices on an extensive line of spray finishing equipment, supplies and accessories are included in the new catalog "ID" (Mar. 1, 1938) compiled and published by the DeVilbiss Co., Toledo, Ohio.

The new catalog covers, in condensed form, DeVilbiss spray-guns, feed tanks and equipment, special containers, air and fluid hose and connections, spray booths and exhaust systems, air-compressing outfits and other DeVilbiss spray finishing equipment for industrial use.

Full specifications on all standard items in the DeVilbiss line are given. All improvements and additions recently made on the company's products are included.

DeVilbiss paint-circulating systems and special and automatic equipment designed, built and installed to meet particular finishing or production conditions, are described and illustrated.

Conveyorized Finishing

IN A FURNITURE FACTORY

Finishing Supervisor of one of the South's largest manufacturers of maple furniture, describes and illustrates operations in the company's completely conveyorized finishing department — and tells why he considers the conveyor system economical and desirable.

by R. E. Casey
Williams Furniture Corp.

WHEN FURNITURE enters our finishing room the first task is to load the cases on to conveyor pans or trays which are low-hung platforms 24x51-in. Each pan is suspended by an inverted U that hangs from an arm projecting out from the overhead conveyor chain. An inspector carefully examines all of the exposed wood surfaces and applies a bleaching solution to all dark streaks. The bleaching solution works very successfully on our maple wood.

The work moves forward slowly (at the rate of 8 or 9-ft. per minute) to the stain spray booth where we apply a water-stain solution. Then the case is wiped thoroughly to a uniform color. Adjoining the stain spray booth is a smaller booth where all of the drawers are sprayed with clear drawer coater.

Following the staining and wash-coating operation the work then circles, by conveyor, around

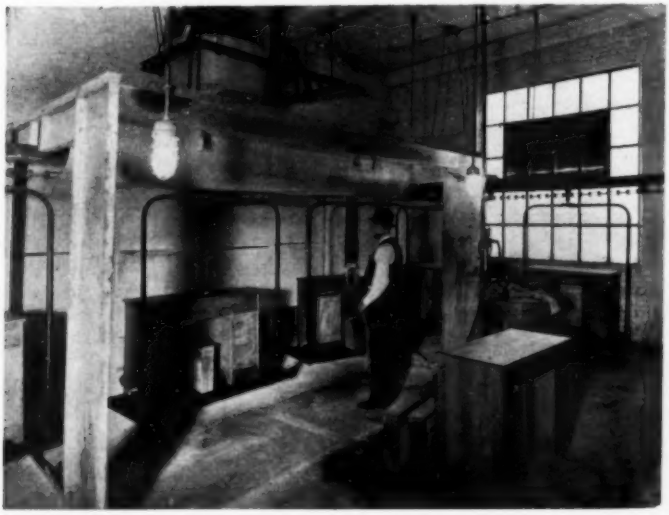
the drying room for approximately 1½ hours. This period of drying prepares it for the sanders. After being properly sanded, the work is then conveyed to the sealer spray room where we apply a coat of lacquer sealer. The sealer dries and the work moves forward to the inspector, who examines each case for flaws in the wood and chalks out any defective part, making it easier for the "burning-in men" to repair.

Another sanding operation is performed after the sealer is thoroughly dry—while the work moves slowly through the sanding room where it is properly sanded to a smooth surface. Next it is moved to the glazing stain spray booth where we apply a coat of maple glaze stain. Immediately after this application the case is carefully wiped with soft cheesecloth.

Then we come to the blenders—workmen who use 4-in. filler brushes to do the blending. After this process the work moves past the stain inspector who examines every item very carefully and, if necessary, reblends or retouches it.

The conveyor then carries the furniture to a higher level (close under the ceiling) where it is taken for a 4-hour ride to permit a thorough drying. Entering the lacquer spray room it is again inspected and dusted off clean before the finishing coat of lacquer is applied. The drying time, following lacquer spraying, is approximately two hours, after which the case is steelwooled and waxed and made ready for the packing room.

In our finishing room, the piece of furniture never leaves the conveyor pan or platform. Every operation is performed while the



DINGY TEETH . . . Wall Flower!

PEARLY TEETH . . . Popular Girl!

The tooth-paste ads tell us that dingy teeth keep girls on the side lines . . . . they're just out of luck for dates, dances, and what not.

And that reminds us of how dingy products are kept on the shelves . . . . they, too, are out of luck for getting any place.

Many a good product is wasting away, warming a shelf for lack of a sprightly finish. And it's such an easy obstacle to overcome.

If you have an article that's behind the eight ball because of an inappropriate or dingy finish, our studio can and will create a finish that will add pearly teeth to your product. There is no charge to reputable firms for this creative studio service.

ROCKFORD VARNISH COMPANY

ROCKFORD, ILLINOIS

conveyor moves along at the slow rate of about 8 or 9-ft. per minute. Approximately 800 pieces are carried through our finishing room per day.

We have found that it is quite necessary to have plenty of room between the pans (as they are hung from the chain conveyor) especially on turns, so there will be no possible chance for a hang-up. In the various booths, we have stop switches where the conveyor can be stopped at any point if necessary.

Our circulating system enables us to spray continuously in our various departments, as we have an operator to mix our finishing material and keep our tanks full at all times.

One of the greatest advantages that we have found in our conveyor system is that it saves so much floor space. Also, it eliminates those dents or bumps that furniture receives in an ordinary factory without a conveyor, because all work performed without a conveyor has to be transferred from room to room, and naturally it receives a certain amount of rough treatment.

The author, who has had approximately 25 years' experience as a foreman finisher in various furniture plants throughout the South, has found by his practical experience that the conveyor system is one of the most economical, time-saving, space-saving, and labor-saving systems that has ever been introduced in a finishing department.

Meyercord Offices Moved Into New Building Near Factory

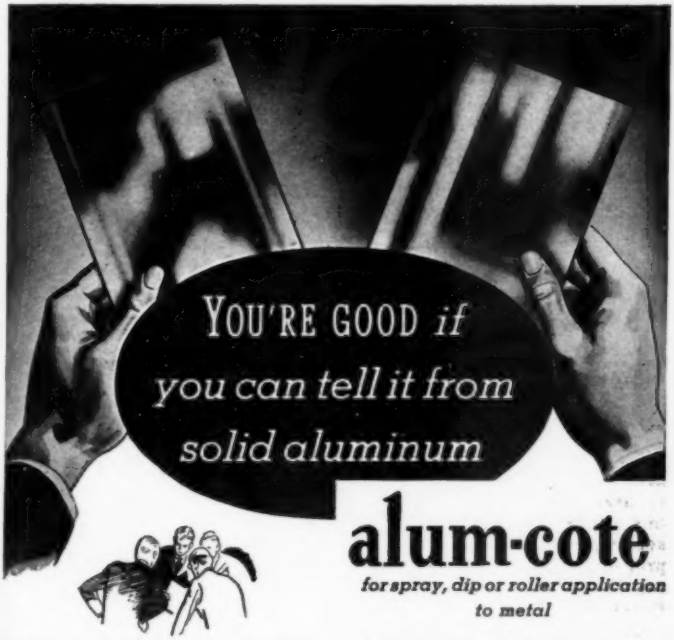
The Meyercord Co. (Mfrs. of decalcomania transfers), Chicago, Ill., has moved its general offices from 208 W. Washington St., to the company's newly erected administration building at 5323 W. Lake St. The new building is of very modern construction and is conveniently located directly across the street from the company's factory.

Detroit Rex Opens Office on West Coast

The Detroit Rex Products Co., Detroit, Mich., manuacturers of degreasing machines, solvents, cleaners and strippers, has opened a branch office at 5905 Pacific Blvd., Huntington Park, Calif. This office will serve the southwest section of the U. S. A warehouse located at Los Angeles will carry ample stocks of solvents, so that immediate delivery can be made to all points in this territory.

Gas-Fired Heater for Ovens

A new automatically-controlled, direct, gas-fired heating unit which insures a constant even temperature in any recirculating oven is announced by the Grand Rapids Blow Pipe and Dust Arrester Co., Grand Rapids, Mich. According to the company's circular, the heater is easy to install, economical and safe to operate, and it is efficient in performance. The complete outfit is assembled on one platform and occupies comparatively small space. Five standard units are offered in capacity of 100,000 to 1,000,000-b.t.u.



alum-cote

for spray, dip or roller application to metal

Retaining its brilliant, continuous surface lustre through deep draws and severe sterilization processes, Alum-Cote is ideal for roller coat, spray, brush or dip application (both baking and air drying types). It is often used to cover over spoiled metal and saves the cost of caustic cleaning as well as wasted sheets. Write for a sample, today—no obligation.

TOUGH JOB HEADQUARTERS

Rx Prescription Finishes

Give us your metal coating problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

THE WATSON-STANDARD CO.

Manufacturers of

PAINTS . . . VARNISHES . . . INDUSTRIAL FINISHES AND LITHOGRAPH COATINGS

FACTORY AND GENERAL OFFICES: PITTSBURGH, PA.
WAREHOUSES: BOSTON · BUFFALO · DETROIT

HOW TO ORDER, TEST, STORE, PREPARE AND USE

Bake Finishing Materials

by Howard H. Ford

THE MAIN points to observe when using a baking finish are how to apply the material, how to reduce it, and how to bake the applied coating to get the full benefit of every gallon of material used. The main thing is to start off with a company (finishing material manufacturer) that handles the material you prefer to use; then submit samples to this company to make up, always keeping in mind to give them the proper colors you desire so they can keep the original sample and follow this at all times.

The proper thing to do (when possible) is to have the paint company's chemist come over and check the complete working conditions that the articles have to be worked under, and the baking time, so that he can build the material to suit your particular requirements. All paint companies today will be pleased to accommodate any customer company by giving them the full benefit of their laboratories.

When colors and adhesion characteristics are all okayed the next step is to have a good storage place to keep your material—both for the idea of fire hazards and to keep the material in the proper temperature. I would suggest that a good place to store paint, if possible, would be a storage room on the roof of the plant, or have an extra steel fire-proof room built on the side of the building where it would be easy to approach and be accessible to the finishing room.

Agitate Contents of New Drum; Draw and Test a Sample

When the first shipment of material is received the proper thing to do is to agitate the material to get your pigments and oils into full body. Then take a small jar and draw a sample from the drum; date and mark it for color and viscosity. Also, take a small piece of glass and dip it into the color. This will serve as a good way to match colors when the next drum comes in.

Where there is a considerable volume of paint used, I would suggest that the foreman have a stationary drum of 55 gallons capacity, with an open top that can be removed when pouring material from the paint company's drums. Then I would say, put in a drum elevator or a hoist and pulley to lift these full drums up to empty them in the stationary drums. In this way the drums can drain freely to get all the material out.

The next step is to put an air-motored agitator, with a reduc-

ADVERTISING PAGES REMOVED

tion unit, so that the contents of these stationary drums can be agitated at least 1½ hours a day each. By following this routine the pigment and varnish of the material will always be completely stirred into thorough mixture.

When the materials are thoroughly agitated, draw out enough to take a viscosity test for the weight of your material. This can be done with a hydrometer to get the proper test. The reason I suggest a viscosity test is because when materials are freshly ground they have a lighter viscosity than when they have had a chance to lay in storage for five or six weeks. By taking a test at least twice a week the foreman knows how much "mileage" he is receiving to each gallon of paint he is using.

Reduce and Strain Material Before Using

When the material is thoroughly agitated and ready for reducing, the foreman should measure his reducer with a graduated measure to find out how much he can reduce his gallon of material without hurting the coverage or the adhesion or the luster. After he determines his proper reduction on the first gallon he can then reduce his full day's run, so that the material will carry the full body it will need for the quality required.

Finally, to prepare the material for spraying, it should be strained through a fine strainer so that no dirt or any hard pigment lumps will enter the fluid hose. When a quart or pint cup gun is used for spraying small quantities at a time, I would suggest using a fine mesh tea strainer to keep the material clean, which is important.

By following these instructions a finisher will have very little if any trouble with his materials, or the clogging up of his spray equipment.

I would suggest a storeroom about 50x25-ft. square, so the foreman can keep two or three drums of each color ahead in order that it will be on hand when he needs it, without waiting for a delivery from the paint manufacturer. Also, this plan will give his material a chance to age. Where 5-gallon or one-gallon cans are ordered, I would suggest the idea of turning the cans on end each day thereby preventing the material from settling on the bottom.

Explosion-Proof Motors

A line of explosion-proof A. C. motors has been announced by the Reliance Electric & Engineering Co., 1088 Ivanhoe Road, Cleveland, Ohio. These motors have been tested and approved by The Underwriters' Laboratories for Class I Group D hazardous locations which include those in which flammable volatile liquids, highly flammable gases, mixtures or other highly flammable substances are made, used or stored in other than the original containers. The construction is such that all working parts are completely enclosed, and the housing is strong enough to withstand even an internal explosion without bursting, loosening the joints, or permitting flame to escape into the outside air.

Lacquer Pumps

A complete line of specially designed rotary pumps is now built by the Worthington Pump and Machinery Corp. of Harrison, N. J., for viscous chemicals. They are ruggedly constructed to efficiently transfer chemicals and finishing materials. These pumps are available in iron, bronze, Monel, nickel, Everdur, stainless steel, aluminum, etc., for capacities up to 700-g.p.m., pressures up to 150-lbs. per sq.in., and viscosities up to 500,000-SSU or 110,000-centipoises.

What's New...

Acid . . . Mar-Proof Finish for Metal

The Ault & Wiborg Corp., 75 Varick St., New York, N. Y., announces a baked finish called "Polymerin" which is claimed to have the following characteristics:

1) Strong ahesive qualities, even on clean bare metal.

2) Bakes quickly . . . . less than usual time.

3) Combines toughness, flexibility and hardness.

4) Available in clear or any color . . . . high gloss, semi-gloss or dull.

5) Sets up rapidly after application.

6) The whites do not discolor in sunlight.

7) The final finish is easily touched up.

"Polymerin" is claimed to be particularly well adapted to use as an attractive and enduring finish on electric appliances, metal cabinets, hospital equipment, stoves and furnaces, machinery, compacts, and toys. A new 12-page booklet, available on request, gives more detailed information about this remarkable new material.

Black Baking Enamels

The Sherwin-Williams Co., Cleveland, Ohio, announces a series of four production black baking enamels—A, B, C and D—offered for low-cost product finishing which, the company claims, sets a new standard for value, performance and service.

Ratings for performance and service have been determined by thorough testing and have been tabulated to show the values developed at baking temperatures of 200°, 250°, 300°, 350° and 400°F. Ratings are charted for gloss, elasticity, adhesion, gasoline resistance, salt spray, bleeding and hardness. This enables the manufacturer to select the enamel and the finishing procedure best suited to the expected service of his product.

Production Enamel "A" bakes to a rich gloss without being so sharp as to accentuate surface imperfections. Enamel "B" is similar to "A" but with somewhat lower gloss. Enamel "C" can be air-dried or baked and provides the sharpest gloss. Enamel "D" is the dull finish of the group.

The manufacturer states that these enamels are formulated to apply equally well by spray, floco or dip methods, and that their wide acceptance for automobile frames is due, in part, to exceptional long free drain which eliminates runs and sags.

It is expected that these production black enamels will serve an extensive field because of their easy application to metal products as diversified as automobile frames and coat hangers, bed springs and building hardware, implements, display racks, camp stoves and steel drums.

New Lacquer Resists Rust Inhibitors

A clear lacquer that can be used on equipment lubricated with oils containing rust-inhibiting substances, such as are widely used in mechanical refrigerators, electric clocks, and other kinds of equipment, is announced by Maas & Waldstein Co., Newark, N. J. The rust inhibitors preserve steel surfaces from rusting and make possible the construction of apparatus

AIR DRYING ALUMINUM SYNTHETIC

66E-656

BRILLIANCE + DURABILITY

The brilliant smoothness of the finished surface plus the adhesion, durability and weathering qualities of No. 66E-656 Aluminum Synthetic put this material truly in a class by itself.

It is an air drying material which is tack free in 20 minutes eliminating the necessity for long high temperature bakes.

Due to its phenomenal flow and dipping characteristics* irregular shaped articles are noticeably free from sags, runs or drips.

We will welcome the opportunity of proving the unusual qualities of this material.

***It is equally suitable for spray application.**

THE STANLEY CHEMICAL CO.

EAST BERLIN, CONN.

LACQUERS - SYNTHETICS - ENAMELS - JAPANS

A Subsidiary of THE STANLEY WORKS, NEW BRITAIN, CONN.

that can be sealed and operated for years without attention. However, the chemicals used for this purpose create a finishing problem because they react actively with ordinary lacquers and discolor them badly.

This new lacquer is not discolored or otherwise affected by any of the commonly used rust inhibitors. It is also resistant to humidity, salt spray, 10% hydrochloric acid and other chemicals, as well as outdoor exposure; is tough, durable, and strongly adherent and will stand up well under stamping, forming, and other mechanical operations, so that it is especially suited for use on nameplates. It can be applied to aluminum, brass, copper, and other metals by dipping or spraying, and it air-dries rapidly.

Mixing Tank

The DeVilbiss Co., Toledo, Ohio, announces a new hinged-lid mixing tank, designed to facilitate economical and efficient agitation or mixing of lacquer, synthetic enamel and other pigmented finishing materials. This tank provides an inert atmosphere for the mixing of these materials, thereby preventing oxidation while handling.

Available in 30, 60 and 120-gallon capacities, the tanks are plain, straight-sided shells inserted into a foot ring. Covers are 5/16-in. flat steel stock, hinged across the tank with malleable cast-iron hinges.

Clamps render the hinged portion pressure-tight. The remainder of the cover is bolted through a special solvent-resistant gasket into a steel channel welded to the tank lip to provide a gasket recess.

Hinged portion of the cover is of generous area to permit quick, easy filling of tank. A pouring baffle protects the gasket from accumulation of paint and solvents while filling.

Safety has been emphasized in the design of the new mixing tanks.

Tank has hinged-lid, pouring baffle and a safe explosion-proof motor.

Leakage of explosive vapors into the mixing room is prevented by the impervious one-piece gasket. Each tank is equipped with an explosion proof motor, and clamped lid affords assurance against overrunning, with resultant loss and other hazards, in case of emergency.

Degree of agitation in the tanks is adequate for efficient mixture of heavy-bodied pigment portions throughout the entire batch, and maintenance of a properly mixed material.

Tanks have been so designed that they may be inter-connected in many different ways to form a battery for use in paint-circulating systems. Larger tank sizes to meet particular requirements can be supplied on special order.

Synthetic White Baking Enamel

The Sherwin-Williams Co., Cleveland, Ohio, announces a new line of white baking finishes known as Kem appliance white enamels, for which the manufacturer claims a number of features of interest to manufacturers of appliances, furniture and general utility items.

Leading features of the new products are given as: Color stability

SCOTCH ADHESIVE TAPES

leave no residue—no expensive after cleanup. Soft and pliable, they follow any contour, either flat or curved. Scotch Adhesive Tapes will not loosen during spraying operations. Made in a wide variety of types, Scotch Adhesive Tapes withstand high temperatures where baking operations are necessary. There are also tapes that withstand cold temperatures.

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MINNESOTA MINING & MFG. CO., St. Paul, Minn. Dept. IF538

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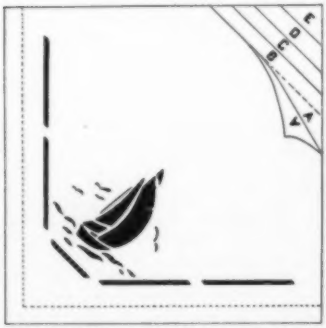
under baking temperatures higher than usually feasible for white enamels, with tolerance of reasonable variations, assuring a dependable color match in assembled articles. Application of the material is said to be easy, and its exceptional build and opacity make possible a full rich finish of unusual beauty. In service it is said to afford maximum resistance to discoloration under exposure to extremes of light, darkness, humidity, grease and usual chemical reagents. Excellent adhesion and hardness, with high resistance to impact, marring and wear are also indicated. Kem appliance white enamels are offered in both high and intermediate baking types to meet various requirements.

Multiple Thickness Paper Stencils

What happens to an ordinary stencil made of stiff paper, sheet metal or any other material, when it is placed in service, is that it soon becomes loaded with waste material around the openings through which the paint is sprayed or brushed. Then the workman must lay it aside and take up a clean stencil or stop and clean it—if it can be cleaned successfully.



Typical Multiwear stencil with design to be placed on the corner of a card table top. Thin sheets to be peeled off, as they become loaded with paint, are marked A, B, C and D., see top—right.

Realizing and appreciating the great loss of time involved in the cleaning of ordinary single-sheet stencils, Mr. H. F. Rugenstein, 314 Liberty Bldg., Indianapolis, Ind., began working on the idea of a multiple thickness stencil, his objective being to have two to five extra sheets of thin paper adhering to the usual single cardboard stencil, but with a non-drying adhesive so that, one at a time as they became loaded with stencil paint, the top sheets could be peeled off to expose a completely new clean surface. He has been successful in producing such a stencil and has patented it, calling it the "Multiwear Stencil." Quoting from Mr. Rugenstein's letter:

"The Multiwear Stencil is composed of a main body sheet upon one face of which is applied a plurality of superimposed relatively thin tough sheets of material impervious to pigment. The several sheets and the body sheet are bonded together by a bonding material which, as to immediately adherent sheets, may be readily ruptured by stripping the exposed sheet from its adjacent sheet, the outermost sheet of said adherent sheet being so formed at one point that a portion of each subjacent sheet is exposed to view.

"Thus, when the exposed sheet becomes heavily coated, the adherent pigment may be easily removed, with the surface sheet rendering a clean surface for further use. This process may be continued until all plies have rendered their service. Lacquers and bronzes naturally render more reproductions than thicker pigments or even flat paint.

"These stencils are made of various sizes, designs and number of plies, depending on the particular job intended by the customer. The cost is greatly reduced on cutting and the number of reproductions greatly increased."

EGYPTIAN N. F. R.

Egyptian Synthetic Finishes, known to the trade as Egyptian N. F. R., are becoming increasingly popular as a finish on a variety of industrial products. Because of their unsurpassed quality and the wide range of materials comprising the Egyptian Synthetic Line, they are rapidly being adopted as a standard finish in a number of manufacturing plants.

Furnished in 28 standard colors as well as black, white and clear . . . For Spray, Brush and Dip application . . . Glossy or Satin Finish . . . Air Dry or Bake . . . Also available for use on coating machine.

We will be glad to furnish manufacturers of industrial products with additional information and color cards upon request.

The Egyptian Lacquer Mfg. Co.

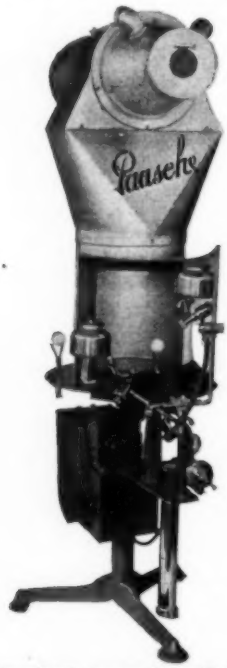
Rockefeller Center

New York, N. Y.

EGYPTIAN FINISHES

Golf Ball Spray Machine

An automatic machine for spray-coating golf balls at the rate of 400 balls per hour is offered by Paasche Airbrush Co., 1917 Diversey Parkway, Chicago, Ill. The unit includes a 20-



Automatically sprays 400 golf balls per hour.

in. diameter ball-bearing steel table with 4-spindle assemblies, cam roller and spray shield, four 3-prong removable carrying fixtures, automatic non-jamming gear rack, automatic off-&-on control for airbrushes, electric motor drive (with ⅛-hp. motor to operate at a speed of 1 or 2-rpm.) mounted on an electrically-welded steel base; two automatic airbrushes with quart gravity-feed cups; a water, oil, rust and dirt separator with air-regulator to provide clean dry air at the desired air pressure; and ¼-hp. fully enclosed ventilating unit with hood and duct.

Wood Lacquers

Three lacquers for use in wood finishing, announced by The Rudd Lacquer & Sealer Corp., 80 Cliff St., New York, N. Y., include W-1025 Clear Gloss Lacquer-24, and F-1625 Flat Wood Lacquer-24.

In referring to these two materials, the company says:

Our theoretical figure on total solids of W-1025 and F-1625 is 24%, and when reduced for spraying on the basis of thinning two parts of lacquer to three parts of thinner, these materials have a very low cost.

Modified sanding sealer S-1225 contains 24% total solids, according to the company's letter.

W. J. Murray, President of Finishing Products, Dies

Mr. Walter J. Murray, President of Finishing Products Co., Indianapolis, Ind., died at his home in Indianapolis, May 3, after a brief illness. He was 65 years old and had been associated with Finishing Products Co. for 18 years. Survivors include the widow, three daughters and two grandchildren.

Detroit Rex Opens Branch Office in Cleveland

The Detroit Rex Products Co. of Detroit, Mich., manufacturers of Detrex degreasing machines, Perm-A-Clor and Triad solvents, and Triad alkali cleaners and strippers, announces the opening of a new branch office located at 812 Huron Road, Cleveland, Ohio . . . . established as part of a general expansion program made necessary by an increased demand for the company's products.

TRIPLEX STAIN SAVES LABOR

Triplex gives beautiful results on Maple, Gum, Poplar, etc. In addition to producing a more attractive appearance, it actually saves from one to three operations. May be sprayed, dipped or brushed. Sealer may be applied over it without waiting as it will not rot lacquer finishes. Triplex is available in clear, bright shades of all desired colors.

The background color penetrates the wood, giving permanence of color. The second ingredient permits high-lighting and wiping but avoids a "painty" appearance. The third ingredient increases uniformity.

Only Triplex Stain produces a high degree of uniformity together with a rich, warm undertone in one application.

Triplex will speed up your finish and enable you to secure greater attractiveness, durability and economy. Submit panels or carvings from your regular production and mention your color requirements for a demonstration of Triplex Stain.

JAMES B. DAY & CO.

CHICAGO

Mica Powder in Paints

We would like to inquire whether you could furnish us with any information in regard to the use of wet ground mica powder in the paint industry; also, the advantages in connection therewith.—D. R. Co.

I have used mica in lacquer for coating cables to impart flameproof properties. Special pigments are incorporated along with mica and the entire mixture is ground in pebble mills until it is fine enough for use.

The use of mica in paints has been in vogue for some time. Flake mica of high diameter thinness ratio is used along with conventional pigments to impart covering and color, and the proper vehicles, depending on whether the paint will be used for exterior purposes.

The theory of the mica content is this: The mica flakes will orientate themselves in the film, forming a shield of solid mica which lies in a parallel plane with the dried film, thus imparting a number of desirable properties to the dried film.

Claims are made that this type of paint controls weathering, chalking, tint retention, penetration, brushing, dirt retention, checking, cracking, corrosion, settling, chemical and electrical resistance, and moisture resistance.

It is said from authoritative sources that mica content in the paint will improve outside weathering, and impart excellent brushing properties for inside paints. It improves the properties of primers and sealers; metal and protective paints are made more water resistant; traffic paints have more adhesion to the road surfaces; chemical finishes are more resistant to alkalies and acids; electrical finishes are made more resistant to E. M. F. and have a higher dielectric strength; improves aluminum, gold and copper powder paints.

It should be mentioned that the "micron" size after grinding has a vast effect on the working properties of the various paints mentioned; for instance, certain paints work better when ground only slightly; others when impalpable fineness is effected. Mica is also used in wallpaper coatings; for making rubber batches and for coating paper.

Conventional Buhr stone mills are used in ordinary paint grinding when mica is a constituent. Pebble mills may be used with excellent results if available.—C. J. BRANOLKE.

EDITOR'S NOTE: A mimeographed copy of eight typewritten pages entitled "Mica in Paints," sent out upon request by The English Mica Co., 220 E. 42nd St., New York, N. Y., reveals considerable practical and technical information on this subject. For example, quoting the first two paragraphs:

Mica is a lustrous, laminated, hard silicate of aluminum and magnesium, of crystal system No. 5, a specific gravity of about 2.84,

Questions Answers

WOOD LACQUERS

There are no spectacular developments in wood lacquers. There is, however, the accumulation of years of testing and steady improvement resulting in our present line of gloss and flat lacquers developed for the wood working industries.

Where the maximum dollar value in solids and smooth-flowing solvents is required; where perfected resistance to cold-checking, abrasion, moisture, printing; beverages and light are desired, we shall be more than glad to submit samples for any desired test.

Within the comparatively narrow price range for this type of lacquer, we feel we can and do supply a material unsurpassed for its specific purpose.

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characterized by cleavage in one direction. Possesses high electrical resistance. Will not fracture with temperature changes. Does not expand or contract. Will withstand heat to 2732°F.

Run of mine mica is worked over, and the small percentage possessing perfect cleavage is sheeted and a product termed as plate, sheet and punch is removed for use in the electrical and insulation industries. The balance is used for grinding.

To Remove Mill Scale From Iron

We have a customer who has had difficulty with his paint job because of the incomplete removal of mill scale on iron fence posts that are to be painted. Is there such a material available which would result in a satisfactory job in a cold pickeling operation? This company, of course, is set up to do hot pickeling in another part of the plant, but this process is not possible because of the set-up of their ovens and conveyor system. They could, however, set up a tank to take care of a cold pickeling operation if such a solvent or acid is available to do the job. We will appreciate any information or assistance that you may be able to give.—H. A. Paint Mfg. Co.

The removal of mill scale is a difficult problem, especially where manufacturing schedules do not allow time for weathering. The proper procedure depends greatly on local conditions, therefore, it is difficult to outline a program without this knowledge. In the past we have been of some assistance to manufacturers faced with this problem and we suggest that, if possible, you permit us to send one of our field representatives to the plant where this condition exists.

As you know, our field representatives are all experienced men who are accustomed to analyzing all types of industrial cleaning problems and working out solutions of them. Their recommendations are based on securing maximum cleaning efficiency at a minimum cost of labor and material.—OAKITE PRODUCTS, INC.

Our Metalprep No. 35 may be used for cold pickeling purposes; this is the "dip" grade of Metalprep, and is to be diluted with two parts of water to one part of Metalprep.

The parts to be treated may be dipped in the No. 35 solution until the mill scale is completely removed. We usually recommend that Metalprep No. 35 be used at a working temperature of 120° to 140°F. This product may also be used cold, although, naturally, a longer time is required to accomplish the same purpose.

We should be pleased to submit a working sample of this No. 35 grade of Metalprep to the company in question and give them full details relative to its use.—NEILSON CHEMICAL CO.

We regret to advise that, at the present time, we do not have any solution to offer that can be used cold for the removal of mill scale. The usual procedure is to pickle in hot muriatic acid, to which certain inhibitors have been added.—DETROIT REX PRODUCTS CO.

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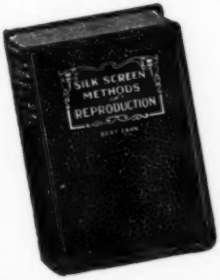

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Practical Publications, Inc.
222 East Ohio Street Indianapolis, Ind.

Author's Comments on Lacquer Correction

Referring to April issue, pages 49 and 50, where Mr. Bennett of The Bloomfield Chemical Co. comments on the third and last installment of my article about "The Finishing of High Grade Furniture," beginning on page 23 of March issue, it is very easy for a writer to become so familiar with his subject that he omits some minor detail. So long as there is no serious misstatement of fact, this usually does not confound the average intelligent reader.

In my article in March issue of INDUSTRIAL FINISHING, page 23, I said: "The license under which all wood lacquers are made . . . ." I should have said, "The license under which all low-viscosity cotton wood lacquers are made . . . ." I had described in some detail the characteristics of both high and low-viscosity wood lacquers, and I question whether omission of these three words would seriously mislead anyone.

On page 24, in the same article, I said: "One lacquer may be built up to the maximum of 27% solids and another may have only 21% solids. Under the license agreement, they both will be sold at a minimum price of $1.50." I might have said 22% solids instead of 21% solids.

In making any comparisons between high and low-viscosity cotton lacquers, I am well aware that this is a controversial subject. I fully expected proponents of high-viscosity cotton lacquers to offer some criticism. It may be observed that I prefaced my statement, page 23, second paragraph, with the phrase ". . . . it is our experience that . . . ."

If this article is the means of eliciting experiences from other lacquer manufacturers and users as to the merits of each kind of lacquer, some interesting experiences may be brought to light.—R. JAY BURNS.

Pickled Pine Finish

We have many orders to construct pieces of furniture using old pine—wood that is 50 to 100 years old. These pieces are to have the "pickled" finish, and many requests are for the grayish tone.

This color is easily obtainable with English deal but the old American pine comes up yellow. We always get a fine finish on this wood when a beige or brownish color is all right, but we have met with little success when a grayish tone is required. Any suggestions will be appreciated. —A. O. C. (Antiques).

The production of a pickled finish on American white pine is not something that would be difficult if the wood is properly bleached prior to the application of any finishing materials. It is our recommendation that the wood be given two applications of "Bleach-White," as this should be sufficient to bring out all of the color and leave the pine of sufficient whiteness to proceed with the production of the pickle color without any yellow undertone. In some cases it may be found that even one application may be sufficient, or more than two applications may be necessary in order to arrive at the

proper color to start with. It is a funny thing, but we have found that the same species of wood very often requires a different number of applications of "Bleach-White" in order to attain the proper degree of bleached surface.

After bleaching, the pickle or grayish tone can be obtained either by using a gray non-grain raising stain, or a gray glaze could be used to impart color. Pine is, of course, of such construction that it needs no filling. After the color has been attained with either of these two methods, then finish with water-white lacquer sealer and clear finishing lacquer. After the rubbing operation with pumice in oil, it is advisable to wax the finish and dust with rottenstone. This gives the gray appearance in some of the pores and the curves.

We have been very successful in developing the pickle finish on pine by this method.—THE GLIDDEN CO.

First, remove all of the old finish with a good varnish remover, using two or more applications of the remover, depending on the condition of the finish. Then, instead of cleaning up the work with naptha, benzol or alcohol, scrub well with a strong soap-water solution. This should be done immediately after the last application of remover has been wiped off. Then rinse with clear water.

After work is dry, sand smooth; then brush on a full wet coat of a mixture of one part of "Super One-Shot Bleach AA" stirred into three parts of "Super Bleaching Solution No. 2." Let it air-dry overnight; then wash with clear water, and when dry, sand smooth. Then apply a 50/50 mixture of white shellac and alcohol, and when dry, sand lightly. Then apply "Gray Wiping Oil Stain No. 125," and wipe down to the effect desired. Let dry overnight; then apply two coats of water-white semi-gloss lacquer. After rubbing, wax with polishing wax. —GRAND RAPIDS WOOD FINISHING CO.

Gold Leafing Moldings

We are eager to secure information regarding metal leafing on moldings. We seem to have trouble getting a clear luster on the leaf after it is toned. It is foggy and not a clear finish. Is spirit alcohol used to cut the shellac that goes over the gold? We will appreciate any information you can give us regarding this finish.—G. T. Industries (Framed Pictures, Art Novelties).

There are so many ways of application that it is quite impossible to give you very many, but the following data represents the most satisfactory methods of application of gold leaf to picture frames —and moldings would take the same method.

Method No. 1 (Simplest and Quickest).

Sandpaper the wood to a very smooth surface. Apply a coat of flat paint and when this is thoroughly dry, sandpaper it to a smooth surface. Over this smoothly painted surface brush on a thin coat of good quality shellac. When this is thoroughly dry and hard, apply japan gold size. Allow this to dry until there is practically no stickiness to the touch; then

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lay on the gold with tip or cotton and thoroughly batten it down. Allow the frame to dry for about 24 hours, and then apply a very thin coat of the best grade bleached shellac that can be purchased. This shellac will not destroy the luster of the gold, and it is necessary to protect the gold. When this system is used, the gold cannot be burnished with an agate.

Method No. 2 (To be used when gold must be burnished with an agate).

Sandpaper the wood to a very smooth surface. Apply a thin coating of whiting made up as follows:

Rabbit skin glue	lbs., ½
Water	pints, 3
Whiting, Imported French	pints, 4

To put the glue in solution, allow it to stand overnight in warm water. This solution should be applied hot in order to prevent cracking. When the whiting-coated surface is thoroughly dry, sandpaper it perfectly smooth. The next coating is made up of gilder's delight gold size, which should be mixed with glue according to directions on the package. This should be about the consistency of heavy cream when it is being applied. When it is dry, none of the red clay should rub off. This coating also should be smoothed with sandpaper. When the gold is laid on, only the amount of frame should be moistened which is to be covered by the leaf. For moistening, use the following formula:

Water	pints, 1
Alcohol	teaspoonful, 1
Glue	teaspoonful, 1

The gold should be well battened down in this process. Allow it to dry for about 12 hours. Then burnish with agate, and apply a

thin coating of a good grade bleached shellac, as in the first method.

We trust this information will be of help to you.—M. SWIFT & SONS, INC. (Gold Leaf Mfrs.).

Manufacturers of picture frames and P. F. moldings use imitation gold metal leaf and generally protect it with one coat of white shellac reduced with denatured alcohol. Others use so-called French varnish, which is really refined white shellac, thereby obtaining a clear lustrous finish.—BAER BROS. (Mfrs. Finishing Materials).

Refinishing Oak Desks and Chairs

Recently our firm obtained a contract for refinishing several hundred light oak desks and chairs. I wonder if you could help me with the problems which this important order brought forth? The following is our schedule of operations:

1) All finish is removed from the desk with varnish remover. The surface is wiped dry with burlap.

2) Benzine is quickly brushed on to rinse and clean the surfaces.

3) The surfaces are washed carefully with ammonia water and wiped lightly.

4) While still damp, warm oxalic acid is brushed on.

The results are only fair. The bleaching is not always effective. Sunburned panels, for example, remain quite dark despite all efforts to bleach out the color. Small brown spots and discolora-

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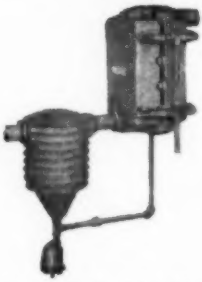

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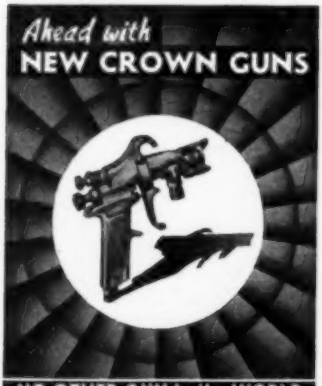

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tions are not removed. Also, this process raises the grain excessively, leaving the surface difficult to sand because of the oxalic dust.

Can you suggest a better method? Quality is our first consideration. Can you also suggest a good ink remover to take out deeply embedded ink stains?

On a cheaper grade of work we wash the finish with ammonia and then spray one or two coats of lacquer directly on top of the old finish. Could you suggest a better cleaner than ammonia—one which perhaps would have a slight bleaching action?—T. J.

If the finish to be removed is varnish I would wash the surfaces with alcohol and rub gently with steelwool. Then wash again with alcohol and wipe with a clean cloth.

When it is necessary to remove the old varnish, I use a heavy paste type remover, wetting a small area at a time and always keeping one spot wet while removing another. Benzine is a good wash to use for removing varnish remover, but I prefer alcohol as it seems to enable me to get a more uniform removal and it lightens the finish.

I do not recommend the use of ammonia, as it acts on the tannin which is present in the wood. The result is a slight imitation fumed oak finish. This would not be desirable as the fumed oak appearance could be easily mistaken for a sun-burned panel such as T. J. refers to.

When oxalic acid is applied as a bleach, it should be put on hot. A number of applications may be necessary in order to get the de-

sired result. The bleach should then be washed off with hot water to stop the action of the acid. This will also eliminate the oxalic dust which is referred to, and make the finish easier to sand.

I do not recommend an oxalic acid bleach unless it is absolutely necessary, as its use necessitates a great deal of labor and it is questionable whether the results justify the expenditure. Use a good commercial bleaching compound.

Sodium hypochlorite is used extensively for removing ink stains. Printer's ink, of course, will have to be sanded out.

On the cheaper grades of work, where the finish is merely washed off, and a new finish applied over the old, a solution of borax and soap powder can be substituted in place of the ammonia. The small brown spots and discolorations can be removed if a stronger solution of oxalic acid is applied directly to the discoloration. Oxalic acid should be mixed in a porcelain container.

The areas that have had the hardest use will probably contain scratches and stains which can only be removed by sanding down the wood surface. A power sander will prove advantageous, but it must be used with care.—H. H. GLINKE.

In refininshing desks, remove the varnish in the usual way; then rinse with alcohol and follow this with a bath of sal soda (about 5-oz. to a gallon of warm water) and finally rinse with clear water. This gives a good clean surface. The desk is ready for sanding. After a thorough sanding, any sun discolorations may be removed by an applica-

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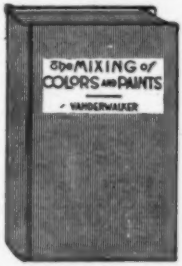

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222 E. Ohio St. Indianapolis, Ind.

tion of —— white bleach made by one of the advertisers in this magazine. Oxalic acid is inferior to modern bleaches that are on the market today.

Any ink spots should be scraped out. If they are embedded too deeply or if the top is badly scarred, a new top should be put on. We have refinished hundreds of desks in this manner and have had no complaints.—F. R. BOYNTON.

I would omit the ammonia water wash, as I can see no need of it. After the old finish has been removed and the residue cleaned off, I would wash all treated surfaces with a boiling hot solution of a floor cleaner which also produces some bleaching effect, but with none of the bad effects of oxalic acid. Sandpaper all dark spots. Rinse well with clear water, and dry. It will probably be necessary to hand scrape the spots that are sunburned in order to go deep enough to remove them.

There are several bleaches advertised in INDUSTRIAL FINISHING which may work better than what you are using.

For removing ink spots, I suggest using a solution of concentrated sulphuric acid — 8-oz. to 1¾ pints of water. Scour the spots with this mixture and sand; then pour some of the mixture on the spots and rub until they disappear.—J. K. COOPER.

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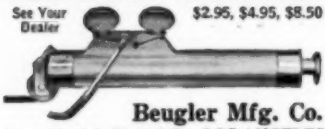

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FINISHES ON DIFFERENT WOODS

PART II

by Orrie D. Maal

Second and final installment of a practical article dealing with methods and schedules for various finishes on our expensive solid woods and veneers, and on certain substitute woods, particularly gum, magnolia, birch, elm and ash.

NOW AS TO MAPLE or a maple finish, the following woods are the most popular: Hard maple, soft maple and magnolia. The colors on maple vary from a near red to a light amber color. Naturally, the hard maple is used on our higher grade furniture, and the soft maple and magnolia on the lesser grades. About the only way I can describe the different colors is by mentioning some of the finishes here.

Several different stains are used; for instance, one way is to use a dark pigmented oil stain for the redder or browner colors. These stains are applied by brush, dip or spray; then wiped out to the desired shade, highlighting if desired while wiping. Some of the lighter shades are obtained in the same way. Then there is the water stain or permanent stain way, wash-coating and sanding, then glazing—either just wiping off the glaze for a plain finish or highlighting at the same time.

Maple Finishes

Maple finishes depend a great deal on the class of lumber used. For high class work, all the different boards used should be sorted out in the mill before gluing in order to get a real uniform finish. This applies especially to the lighter colors, as the lighter colors will naturally show up the quality of the wood.

The finish on maple, after the ground color has been applied, also has something to do with the appearance of the finished article. Quality goods require a quality finish, and this requires several coats of good lacquer or varnish, and a good rubbing. If cheap materials are applied, an inferior article will be the result—and what's the use of using good lumber and a lot of labor and still have a cheap product?

One of the finest finishes I have ever seen on maple was produced as follows: Stain, highlight by sanding, apply glazing, a thin coat of shellac, then several coats of good wax. These pieces are still

good after several years in service and they only require an occasional going over with wax to make them last a life time.

Finishing Elm and Ash

I have also noticed some use of elm and ash. Several years ago these woods were finished like golden oak—with oil stain, oak filler, shellac and varnish. However, I note some concerns are using this wood for overlays or two-tone work in lighter colors. A manufacturer using elm in breakfast sets, finishes them in a blond finish; also in a brown finish similar to a fumed oak. The blond finish is produced as follows: Bleach, fill with natural filler, one coat of gloss lacquer, then use paste wax.

The amber or fumed finish is produced with a light coat of yellow permanent stain, one coat of lacquer sealer, shaded with a brown lacquer shading stain, one coat of gloss lacquer, waxing with brown paste wax. This same treatment can be used on oak.

Birch in a Blond Finish

A lot of birch is also used, mostly in the blond finish. If this wood is sorted (so only the white is selected) in the mill and glue room, it can be easily given an attractive blond finish. However, since most of the manufacturers are not sorting lumber, a sealer coat with white lacquer primer or lacquer enamel added, is generally used to uniform the white and red birch. This coat will naturally hide some of the grain, but the only other way is bleaching. Then you apply a clear coat of lacquer or a coat of white maple varnish, rub and polish to bring out a nice finish. The color of the blond will be determined by the color of the varnish or lacquer. Several of these blond sealers are on the market.

Dress-up Finish Must Be Correct in Every Detail

Let me bring out at this point that no matter how many coats of lacquer or varnish are applied, a piece of furniture poorly rubbed will be just another shabby piece of merchandise—and don't forget to sand between coats. Naturally, all furniture should come to the finishing department smooth and well puttied—if puttying is necessary.

Now a few more items to round out a good piece of furniture: First, the top edges of drawers should be finished just like the outside; they must be smooth and not full of planer marks or worm holes. Some manufacturers will use good woods in their drawer interiors, such as sycamore, mahogany, etc., but fail to put a half way decent finish on these drawers. It is nothing to go into some good furniture store, open a dresser or chiffonier drawer and find filler marks, dirty finger marks, or stain slobbered all over the interior or sides.

I worked for one of the largest and best manufacturers of furniture some years ago, and he never failed to impress upon me the above details. His point of view was: Never allow customers to get slivers in their hands when they run their fingers under edges. Always remember that a drawer pulled out, if it shows poorly finished or sloppy looking, will kill the sale of any piece of furniture, especially if a woman is the customer. These little details are neglected in many cases, but if followed up they will surely more

than pay with increased business. Several good drawer finishes are on the market, but even if the drawers are not finished, a clean looking job is a selling point no matter how you look at it; and we all need all the improvement we can get in furniture, as it means a living to most of us. I am sure most of the readers of INDUSTRIAL FINISHING will agree that we can stand improvement in the furniture of today.

Valentine & Co. Establishes Shellac Division in Detroit

Valentine & Co., 386 Fourth Ave., New York, N. Y., has inaugurated a new Shellac Division which will occupy a factory and bleachery in Detroit, Mich.

Morton Noble will head this new division. He has spent many years purchasing shellac in foreign and domestic markets; he has had a varied experience in selling to trade and industrial fields as well as to the large paint and varnish manufacturers throughout the country.

In charge of manufacturing at the new Shellac Division, will be Otto C. Griem, an experienced shellac manufacturer who at one time directed his own shellac manufacturing business.

Symposium on Synthetic Resins

On the night of March 18, Bakelite Corporation sponsored a special Paint and Varnish Symposium at the New York Museum of Science and Industry. Over 250 guests, including industrial consumers, paint and varnish manufacturers and chemists, listened attentively to a talk given by R. J. Moore, Development Manager, Resin-Varnish Division of Bakelite Corporation, and later on, displayed their interest by asking a multitude of questions during the open discussion. James A. Fredrickson of John W. Masury & Son, presided as chairman of the meeting.

The Symposium was one of three held at the Museum during the month of March in conjunction with the Bakelite Travelcade.

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When Metalprep is used to prepare such metal products as auto bodies, buses, trailers, refrigerator and other cabinets, washing machines, etc., it increases the life of the finish since it eliminates paint failures which are due to rust, grease and improper cleaning of the metal surfaces.

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EDITORIAL

Industrial Inform-A-Show Helps Business

The eagerness of interested people and the general public to visit exhibitions of industrial products and to become better acquainted with what is new and available for use was strikingly emphasized in Indianapolis, Ind., when the Purchasing Agents' Association of Indianapolis, Inc., arranged for and presented its first "Inform-A-Show." Attendance at the 3-day exhibit far surpassed the expectations of its sponsors. Both the space and the time were inadequate to accommodate the crowds who packed the aisles of Murat Temple and others who clamored in vain for admission.

Products of more than 150 firms were attractively shown and a great deal of interesting trade literature was distributed. During the show men of business made new and valuable contacts, renewed past business acquaintanceships and set in motion many business transactions. The show proved to be a welcome gathering place for both the men and their ladies.

This experience in Indianapolis could be duplicated in other industrial or commercial centers with profitable results. It stimulates the interest of both sellers and buyers. It sets in motion new thinking, new plans, new action—all of which is beneficial in the industrial, commercial and business life of every community.

According to the Purchasing Agents' Association, the Inform-A-Show—where suppliers and buyers meet—has its motivation in the earnest desire of the local purchasing agents to bring manufacturers, their sales representatives and their products into a serious, business-promoting contact, where purchasing agents, buyers, executives, superintendents, foremen, students and many others will have the opportunity of knowing more completely the merit of various products which they use.

This was a non-profit undertaking, with only one objective . . . that of bringing the buyer and seller together under ideal conditions. Visitors were urged to take advantage of the opportunity to discuss and study at leisure, unharassed by office demands, the products shown by those exhibiting.

The Inform-A-Show exhibition is an ideal place to show the outstanding features in attractiveness and durability of all kinds of finishes used on industrial products, and the possible and available finishes that can be used on such articles.

Continuous Flow Production

While many large factories are almost ideally arranged and tooled-up for continuous flow production, inspection of a number of smaller establishments shows that their operations are anything but well laid out for economy and speed. So many changes have occurred in certain lines of business during the past five to seven years that efforts toward more straight-line arrangement have lagged while other problems of more serious nature were producing the headaches. But whatever will help to lower manufacturing costs is always timely and worth consideration. Even though perfection can not be attained, some of the costly time-loss areas in production lines can be improved — especially in finishing departments which have now assumed so much more importance.

On the Editor's desk right now is a published diagram extending across the top of a 3-page folder to show how a certain manufacturer's continuous flow production line is operated. It shows conveyors operating between some work stations, carrying materials from one operation to another, thereby eliminating all handling and trucking. Suggestive excerpts from the printed explanation reveal that:

Raw materials converge at the plant, prove their mettle and then, in a manner entirely new to the industry, flow steadily, almost automatically, through every successive step in the manufacture of the product. Think what this new development means. It insures absolute uniformity and unvarying high quality of both ground coats and finish coats. There can be no variance between batches . . . . this new mechanized form of production almost completely eliminates any chance of human error.

A careful study of the floor plan layout and working area at any manufacturing department will reveal to practical minded production men—assisted if possible, by one or more outside engineers — many opportunities to make changes that will improve a company's facilities for getting out its work on the basis of higher quality, greater uniformity and lower cost, which is what every manufacturer earnestly desires.

New Chemical Discoveries May Rule or Ruin You

Business must watch the field of chemical research with unremitting vigilance. New chemical discoveries, in their effects upon industry and commerce, may follow any one of three routes:

1) The new discovery may be absorbed into existing methods of manufacture where it will strengthen what already exists rather than displace it.

2) Certain old products may be completely displaced by a new synthetic.

3) Questions of final cost and

public taste may make use of the new discovery inadvisable.

Depending upon which course the new chemical discovery takes, the resources of some unit skilled in the factors of industrial preparedness must be called upon. It will be the function of such unit to foresee and absorb the shock of any sudden effects which the new achievement may have on older products or processes. To the uninitiated the magnitude of this sentry function is terrifying. Chemistry is a science of great complexity . . . . Something more than spare time thinking by the manufacturing and financial heads of a business is required.

Considering this difficulty, the best course open is to consult a chemical adviser—to establish a source of information here just as you do in legal, accounting, and financial matters. This is perhaps the best way to avoid heavy losses arising from the discovery of a new synthetic product and also to take advantage of an early knowledge of the potentialities of such a product. If no research department is maintained, a relationship should be established with a consulting chemist and the advantage taken of his knowledge. Second, the chemist should be used as an information service; he should keep the company advised of all new products which might affect it for better or worse.

The power of skilled chemical research to safeguard any industry against the very forces of science which might at any moment make it obsolete, has only gradually been recognized. The industrial revolution of the 18th century presented a more startling picture than do the constant changes which chemistry is now bringing about in industry . . . .

When the question of competition between natural and synthetic products arises, it is always well to remember that natural sources of supply are limited, whereas synthetic materials can be made from many ingredients—ingredients which can often be changed. The natural product has but one support; the synthetic product has many. Whole industries can be wiped out if they fail to see and secure the advantage of revolutionary chemical discoveries. And yet, the new process may be excellent and still fail to displace the original method or product.

Determining the route and calculating the results of invention with respect to industry is particularly the function of organized research. Operating in this manner, chemical research is today the lookout in the foretop for a great many American industries.—*The Chemical Digest.*

Letters from I. F. Readers

(Continued from page 8)

like finishing pen holders, toys, wood and steel cabinets, furniture, etc. They want to know if there are any special automatic dipping methods or other finishing methods employed in this country for such industries, where they can secure supplies or outfits for these finishes.

We have no material on this subject, but believe that INDUSTRIAL FINISHING has the information they desire and would suggest that you send them a sample copy. Any other assistance you may be able to give them would also be appreciated.—M. A. O. Co.

Baking Lamps

Will you please favor me with the latest information on "Portable Baking Units for Synthetic Enamels on Motor Cars"? I have a recollection that about two years ago, an article was published in INDUSTRIAL FINISHING illustrating this system. I

frequently lend my copies of "I. F." to my customers and rarely get them back, so have been unable to trace this one.

Bake finishing (stoving) is being carried out here extensively on refrigerators, water heaters, hospital and store equipment, etc., and more recently on motor vehicles in the works of General Motors Holdens Ltd. and The Ford Co. As a result a number of refinish shops have installed ovens, but the cost is too great for the average shop.

I would therefore esteem it a great favor if you would contact a supply house and get them to communicate with me providing illustrations and quotations for the supply.

My recollection of the unit is that it was a radiator type on a stand, operating on about a quarter section of a car; then moved along and around the job. Of course there may be improvements since then and I am anxious to get a line-up on it, as I believe good business can be done. A number of my customers are more than interested when I mention the possibilities.—L. N. W., So. Australia.

The article L. N. W. faintly remembers appeared in Feb. 1935 issue, page 20. Another article was published in March 1938 issue, pages 63 and 64. This inquiry has been referred to a manufacturer of baking lamps.—Ed.

Heat-Resistant Paint

If you will give us the name of the B. B. Co., Jackson, Miss., mentioned in March issue, page 9, we will be glad to send them our literture on Hilume Heat-Resisting Aluminum, as well as liquid samples of this and several other aluminum vehicles for test.—Hilo Varnish Corp.

Is There a Finish That Prevents Discoloration?

Some of our customers, to whom we have sold considerable harewood, both in the natural and silver gray (the latter treated chemically to produce the gray color), have been objecting, claiming that the color turns and they are having serious complaints on some of the furniture they have sold, as a result.

We know that all woods (as well as those other things which nature has provided in white, such as ivory, bone, etc.) will change in time, due to the action of light and air, but we would like to know if anyone in the finishing industry has found or developed a lacquer or varnish that will absolutely protect the wood from light and air, so as to prevent this. We doubt it, but will appreciate any information you may have developed along these lines.—D. H. G. Co. (Foreign & Domestic Hardwoods).

Black Crackle Finish; Clear Coating

We are interested in black crackle finish on rough casting work. Since we desire a baked finish we are wondering if you have or know of a clear material which can be applied over the crackle finish that will stand firing. It is not necessary that the final firing finish exceed 250°F. We would appreciate very much your giving us any information you can along this line.—O. E. Co. (Dental Furniture).

Aluminum Paint

A metal ceiling maker abroad wants to buy aluminum paint and, more likely, a cheaper paint simulating aluminum, for use in dip coating metal ceiling. Could you give us the names of some paint factories making and specializing in this material?—U. M. Co. (Foreign Sales Agents).

Rubber Lacquer

I am interested in a coating to be applied to very thin sheets of rubber—about 1/64-in. thick, 3-ft. wide and 6-ft. long. It has cloth on one side; the rubber side I wish to coat. The type of rubber I am using is a liquid selfvulcanizing at normal room

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The problem had three distinct phases: (1) To resist metal corrosion from water used in washing air; (2) To resist impact of dust particles striking the blades of blowers and other interior surfaces; (3) Need for speed in application and drying of coating.

All of these conditions were satisfactorily met by the development of a two coat system of quick air drying materials. The test application was made in one of the largest broadcasting studios where broadcasts are almost continuous. The two coats dried so rapidly that both applications were made in the short time that the system could be closed down. Inspection after a year of constant use shows that this finishing system has withstood the extreme service requirements better than any coatings ever tried by that company.

Those interested in this problem, or in the solution of a specific problem of their own, are invited to write, furnishing all details, to—INDUSTRIAL RESEARCH DIVISION OF WIPE-ON CORPORATION, 105 HUDSON STREET, NEW YORK. A complimentary copy of "Case Histories" will be sent covering this problem and others, such as, non-discoloring white metal finishes; burn-proof enamels; two-tone finishes; eyelet coatings, 10 minute air dry metal finishes; magnesium alloy finishes; airplane finishes and seam compound, and coatings to resist alkali, alcohol and acids.—Adv.

temperature. Would your material contract in drying and cause this sheet to curl? That would be objectionable. It also must have considerable resistance to turpentine and linseed oil.

Please send me full particulars; also a small sample in white if you think your product meets my requirements. I would prefer the air-drying material if it can be applied after the rubber cures.—W. D. F.

Painting Routed Grooves

We are interested in obtaining a device for painting rough routing grooves in drawer fronts, and will appreciate any information you have that will make this work more rapid. Also, send us names of striping tool manufacturers and their addresses. —L. Furn. Industries (Bedroom Furniture).

Dipping Machine

We have a copy of February 1936 issue of INDUSTRIAL FINISHING in which there appears an item about an automatic dipping machine made by Northern Machine Mfg. Co. This is at the bottom of page 58. Will you have this company send us literature on this unit, or advise us their address that we may write them direct?—E. T. Corp.

Portable Sander

We have a customer who is in the market for an air-driven or electric portable hand sander—one that can be used similar to a plane. In other words, we mean a short sand belt that runs over two small drums and which can be carried by hand over the top of the work. This sander is similar to one made by the S— Co., but is lighter in weight.—W. P. T. Co.

Small Wood Articles

In connection with a new line which we are bringing out, we require information regarding production painting and finishing of small wood articles. Frankly, we know very little about the whole subject and would appreciate your help in giving us literature about dipping, tumbling, etc. Perhaps you could put us in contact with manufacturers of paint who would go into the

matter with us. Our requirements, while not large at present, might run to as much as 100 gallons a month in quick-drying color paints and varnish stains.—L. D. Co.

Rotary Spray Machine

Please send us full information regarding the rotary spray finishing machine mentioned and illustrated on page 15 of your February 1938 issue. —A. B. Uph. Co.

The machine you inquire about is made by The DeVilbiss Co., Toledo, Ohio.—Ed.

Brass Cup Hooks

In your August issue of 1937, on page 76, there is an inquiry regarding the finishing of brass cup hooks. Please advise if you can give us any information as to this finishing regarding the process and materials used. We are inclosing a sample. —E. T. E. Co.

Dipping Water Dye

In your issue of June 1936 on page 29, you have an article on "Dipping Water Dye," signed by H. H. Ford. We have occasion to use some of this material and would like to get in communication with the writer of this article, if possible. We note he tells how to do each operation, but does not give the recipe for mixing the dye.—I. E. & Co. (Marking Devices).

Concrete Floor Paint

We noticed an article in the December issue of INDUSTRIAL FINISHING regarding an enduring concrete floor paint. We would appreciate the name of the product as well as its manufacturer.—N. A. Co. (Heating and Plumbing Material).

Paint Meter

We are interested in the Niagara Paint Meter described in February issue of INDUSTRIAL FINISHING, page 19. We would like to know the price of the ½-in. AVG size or one that can be used on the fluid connection of the DeVilbiss pressure equipment, and whether they can be used with gravity feed. Also, whatever other information is available. Please forward this inquiry to the company manufacturing them. — R. Furn. Co.

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